THE CONCEPT OF PRICE-DETERMINING RENT.[1]

Of the many theories of the earlier economists which have been subjected to sharp criticism by modern writers, none has been more persistently attacked than the classic dictum that rent does not form an element in price. The criticism in this case has not amounted to a denial of the whole principle of the Ricardian theory of rent, but it is held that as here applied it illustrates the tendency of the earlier writers to derive from premises of very restricted validity conclusions which express only partial truths. Thus there has been developed the concept of "marginal," or "price-determining," as distinguished from "differential," or "price-determined" rent.

According to the Ricardian economists, rent is a surplus product of land above the cost of production. There is always, it asserts, a no-rent margin of cultivation where the conditions are so unfavorable for the production of a given commodity, that the amount of product realized merely pays for the amount of labor and capital expended in producing it. Every part of any additional product obtained by the employment of an equal quantity of labor and capital on better soils or under more favorable conditions goes to the landlord as rent. Such rent does not enter into the price of produce; for should the landlord remit this rent, prices would remain unaffected, the remission not diminishing the cost of production of that part produced at the margin of cultivation, where no rent is paid, which part fixes the price of the whole product. Such a rent is "price-determined," for while the rent does not affect the price, the price determines what the rent shall be.

Such is the Ricardian idea of rent, to which has been given the name "differential," to distinguish it from the later concep-

[1] I am indebted to Professor T. N. Carver for valuable suggestions in preparing this paper.

tion of "marginal" surplus. Those who maintain that such a distinction should be made assert that the older theory is entirely valid only when land is devoted to a single use; that it does not hold when land is devoted to a series of productive uses, as we find it under actual conditions. When land at the margin of cultivation for a particular purpose is adapted to some other product, and for such use pays a rent, this marginal rent, so it is said, must be debited as cost to the marginal product referred to, and must enter into the price of such product, thus becoming "price-determining."

It is said that J. S. Mill was the first English writer to give expression to this distinction. He thus states the case:

> Rent is not an element in the cost of production of the commodity which yields it; except in the case (rather conceivable than actually existing) in which it results from, and represents, a scarcity value. But when land capable of yielding rent in agriculture is applied to some other purpose, the rent which it would have yielded is an element in the cost of production of the commodity which it is employed to produce.[1]

Jevons goes further, and cites the above passage with this criticism:

> Here Mill edges in as an exceptional case that which proves to be the rule . . . . But wherefore this distinction between agriculture and other branches of industry? Why does not the same principle apply between two different modes of agricultural employment? If land which has been yielding £2 per acre rent as pasture be ploughed up and used for raising wheat, must not the £2 per acre be debited against the expenses of the production of wheat.[2]

Mr. John A. Hobson has this to say:

> It is only of unqualified or common agricultural land, in a community which can obtain access to unused land, that it is true that rent forms no part of price. Wherever the peculiar properties or requirements of land as a requisite of production assign an absolute limit to the supply, so that a fall in the margin of cultivation cannot adequately operate, this absoluteness of monopoly gives a rental to the worst land in use for a particular object, and enables that rent to figure in prices.[3]

[1] *Principles of Political Economy*, book iii. chap. vi. (5th London ed. vol. i. p. 589; People's ed. p. 291.)

[2] *Theory of Political Economy*, 2d ed., Preface, pp. liii–liv.

[3] "The Law of the Three Rents," *Quarterly Journal of Economics*, April 1891,

Let me further quote Professor Patten, who has urged the recognition of a price-determining rent with special emphasis:

If the marginal land used for gardening will yield a rent for wheat, the value of the marginal produce of garden products must equal the cost of the labor employed plus the rent of the land when used for wheat. And if this land is afterwards used for building purposes, the rent which gardeners would pay for the land must be added to the other expenses which the occupiers of these houses must pay.[1]

The list of quotations from writers who have recognized in marginal rent a distinct factor in distribution, might be greatly extended.[2] Enough have been given to show that a very distinct concept has been added to that of the differential surplus of Ricardo and Adam Smith — a concept of a surplus[3] which under actual conditions must figure in the prices of agricultural produce.

Mr. J. H. Hollander has pointed out that this concept of marginal rent as a factor in distribution, involving the modification of the dictum that rent does not enter into price, as urged by these writers above referred to, has arisen from "a denial of the existence in actual cultivation of no-rent land, and neglect of intensive cultivation."[4] Mr. Hollander has also here shown that the law of rent as formulated by the earlier economists is entirely independent of the existence of a body of no-rent land, and that Ricardo himself without doubt recognized this fact.

That a no-rent margin of cultivation may exist independently of any body of no-rent land can be easily shown. Suppose we

pp. 272–273. See also "The Element of Monopoly in Prices," *Quarterly Journal of Economics*, October 1891, p. 23.

[1] *Theory of Dynamic Economics*, p. 58. See also *Premises of Political Economy*, p. 22.

[2] See also ANDREWS, *Institutes of Economics*, p. 167; WIESER, *Natural Value*, p. 209; COMMONS, *Distribution of Wealth*, p. 221. For German literature on this point extending back to 1829, MACFARLANE, "History of the General Doctrine of Rent in German Economics."

[3] To avoid confusion it has been suggested that this marginal surplus be designated "profit." MACFARLANE, "Rent and Profit," *Annals of the American Academy*, July 1894, p. 90.

[4] "The Concept of Marginal Rent," *Quarterly Journal of Economics*, January 1895, p. 185.

take the case of an island in which the population has increased until every portion of the land is in use. Even the most unfavorably located parts of the island will now be able to produce a rent due to scarcity; but this surplus will by no means be price-determining. From the moment that every portion of the land is brought under cultivation, every additional increment of product must come from intensive cultivation; and the last increment of product secured will but just pay for the capital and labor expended in its production. In other words, this last use of the land is a no-rent use, for there is no surplus above cost of production. Prices will rise, because, owing to constantly diminishing returns in intensive cultivation, every additional increment of product requires a greater proportional outlay, and the cost of this last product fixes the price of the whole. If all rents were remitted, prices would not fall, for such remission would not reduce the cost of production of this last increment of product which fixes the price. Hence any surplus due to scarcity cannot be a price-determining surplus. It is the old Ricardian rent, pure and simple.

But it seems to me that this concept of price-determining rent arises from a still more fundamental error—a failure to hold to the idea of the very source and nature of rent. To the differences in productivity of soils and to the differences in productivity of successive uses of the same soil, rents are wholly due. They arise the moment there is difference in the cost of production of equal increments of product, and amount to the whole of this difference. If all soils were of equal fertility, a man would be very foolish to pay rent for one piece of land when another equally good might be had for the using. And when all such lands were taken up, there would still be no rent, if in intensive cultivation the second use of the soil, that is, the second of equal applications of labor and capital, were to produce as much as the first, the third as much as the second, etc.; for there would still be no difference in productivity, no part of the whole product would be more expensive to produce than any other part, and hence there could be no rent. It is only because different areas are *not* equally desirable; and the second of equal applications of labor and capital will *not* produce as much as the first, that rents arise.

Why will a certain field be used for the cultivation of hops instead of the cultivation of wheat? Merely because it will produce more in hops than in wheat. Why will this hop field command more rent than a wheat field? Because it is more productive per unit of labor and capital, and to this extent and for this reason will pay the higher rent. Hops are not raised on land in preference to wheat because they will pay more rent; but more rent is paid because the land is *more productive* when devoted to hops than when devoted to wheat. If, then, rents are due solely to differences in productivity, why make a distinction between rents for two different purposes of production? Is not a higher price paid as rent for hop land in preference to wheat land for the same reason that one wheat field commands more rent than another, and can we say that in the one case we have a different kind of rent than in the other?

A failure to cling to this very pertinent fact, that rents are due exclusively to differences in productivity of soils, or uses of soils, is a source of great confusion of thought. But if we endeavor to hold to it, and at the same time to the concept of marginal rent, we are led into great inconsistencies. Suppose we have side by side two fields of equal fertility, each field divided into two sections, one of which is of better soil than the other. The first field is devoted to hops and wheat, the hops occupying the more fertile portion. The second field has wheat in both sections; but the wheat grown in the more fertile section attains such a growth that it is of like value with the hops in the first field. We now have illustrated in the first field a marginal rent, since according to this theory whatever rent the wheat section pays must enter into the price of the hops—is a price-determining rent; while in the second field, where the difference in productivity of the two sections is just as great, where the difference in returns from these sections is precisely the same, we have only a differential rent, which does not enter into the price of wheat. This is certainly an anomalous situation.

But it may be urged in objection that no two pieces of land of like fertility would ever yield the same value in wheat as in hops. It is, however, conceivable that by a process of artificial selection a new kind of wheat might be produced, which, on an area of equal fertility would be as profitable as hops. If this wheat were raised side by side with the old variety, the advocates of marginal rent would now say that the rent of the land used for the poorer kind must enter into the price of the better kind, the same as in the case of the hops. But if a marginal rent holds good in the cultivation of different varieties of the same product, it also involves the somewhat grotesque proposition that the price of Hereford beef is increased by the rent of the land on which a Texas steer may happen to graze.

I will now attempt to give in more detail proof in support of my thesis; and for a clearer presentation the accompanying diagram is submitted, intended to represent the rent of an area of land devoted to several purposes, and the law of the distribution of this rent. The line OP represents the radius of the area (which for the sake of simplicity we will assume to be circular) whose center and point of greatest productivity is at O. This radius extends outward through section A, devoted to building lots; section B, to market gardening; C, to general farming; and D, the poorest section in use, utilized for pasture. Beyond section D we can conceive of a body of no-rent land.

Let the rent curve for building lots start at E, the highest increment of rent per unit of area being OE. But the productivity of land for building purposes decreases rapidly away from the center, and the curve will fall quite abruptly to F, where for building lots land will be worth nothing and pay no rent. The rent curve for market gardening will start at a point lower down than E, say at E', since in the most favorable locations land is more productive for building purposes than for gardening; but it will extend farther out, say to F', since location near the center is not so essential as in the case of building lots.

For similar reasons, the rent curve for farming lands will start at a point lower down than E', say at E'', and extend out beyond F', say to F''; and the rent curve for pasture will start at the lowest point, E''', and extend furthest out, say to

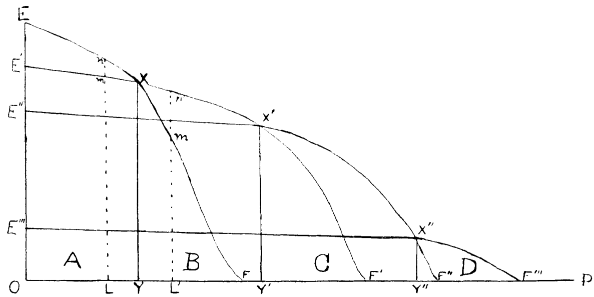

DIAGRAM I.

F'''. The line $EXX'\ X''\ F'''$ will now represent the true rent curve for the whole area of land. At X, the intersection of EF and $E'\ F'$, the rent offered for market gardening exactly equals that offered for building purposes, the efforts of gardeners to extend their operations inward being exactly counterbalanced by the efforts of builders to extend outward. Hence at this point of equilibrium the vertical XY may be drawn, this designating the border line between rent paid for gardening and that paid for building lots. For similar reasons $X'\ Y'$ and $X''\ Y''$ will represent border lines between rents paid for market gardening and farming, and farming and pasture respectively.

It is certain that if rent enters into the price of produce, a remission of rents should lower prices to the extent that rent enters into them. But it is equally certain that if the demand for a commodity is stable, prices can fall only through an increase in the supply, and an increase in the supply of agricultural produce can come about only through a cultivation of more land, or a more vigorous cultivation of the land already in use; in other words, by a more extensive or more intensive cultivation.

Will there in this supposed case of remission of rents be more extensive cultivation? By reference to our diagram we may be able to answer this question. If building lots are extended such extension must crowd over on to lands now used for gardening; if gardens are extended they must occupy land now used for building or for farming purposes; if farming is extended it must displace gardening or pasturage. Now, why would not a market gardener extend his operations into land now used for building purposes? Simply because when he crosses the point Y between sections B and A, he reaches land *which is more productive for building purposes than for gardening;* it is hence more profitable when devoted to the former than to the latter purpose. For a similar reason, building lots cannot displace market gardening; because when we cross from section A into section B, we find the rent curve for gardening higher than for building, hence the land B is more productive for gardening than for building. There is only one point where the soil is equally productive for building and for gardening, and that is at Y, whose rent per unit of area is YX. On one side of this point, say at L, land is more productive for building lots than for gardening by the amount mn $[Ln - Lm = mn]$. On the opposite side, say at L', land is more productive for garden produce by the amount $m'n'$ $[L'n' - L'm' = m'n']$. Thus there will be no readjustment of the point Y, nor of Y', nor of Y''. The same respective amounts of land will be devoted to the several uses as before, the supply of any product will thus not be increased by extensive cultivation, and hence the price cannot fall.

But were we to disregard the fact that land is always devoted to the use for which it is most profitable, we may reach the same conclusion by another line of reasoning. On the supposition that rents enter into the price of the product, a remission of rents would reduce the normal cost of the product by an amount formerly paid for land devoted to the next lower use; hence the price will fall, and other things being equal, the demand increase. To supply the increased demand for building lots, new land must be acquired by taking possession of some of the soil now used for gardening. But the price of garden produce has also fallen, the demand has increased, and the gardeners will not only wish to acquire land now used for farming purposes, but also land now used for building lots, since now the rents paid for the less favorably situated building lots are less than was formerly paid for the more productive garden soils. The same will be true of the farmers, and also of those utilizing pasture lands. The tendency to expand in one direction will be offset by the counter-tendency to expand in the other, and no change will result. The supply being therefore limited to what it was before, the tendency for prices to fall will be checked, and the producers will be the only ones benefited by a remission of rents.

If it now appears that prices could not fall by reason of extensive cultivation should rents be remitted, it may readily be shown that the same will hold true with reference to intensive cultivation. If there exists a body of no-rent land at the margin of cultivation, any increased demand will be met partially from extensive, partially from intensive, cultivation; and moreover, the supply from one of these sources will tend to equal the supply from the other; for if equal "doses" of labor and capital will produce more from one than from the other, further demands will be met from that source alone until decreasing returns have again brought about an equilibrium. Hence, if, as we have shown, there is no tendency toward extensive, neither will there be any tendency toward intensive, cultivation.

More than this, labor and capital will always be applied to intensive cultivation until the last increment of product will only pay for the expense of its production. If, now, rents were remitted and prices were to fall, the last application of labor and capital will no longer be remunerative, and will hence be withheld unless labor becomes cheaper or prices become higher —both conditions being contrary to the hypothesis. This consideration must also preclude the further application of labor and capital to increase the product when there is no longer a body of no-rent land, when all further demand must be met by intensive cultivation.

It has been pointed out that with respect to labor we have illustrated a true differential rent. "As the product of land may be measured from a standard afforded by the returns from the poorest soil in cultivation, so the product of labor may be measured from a standard set by the returns from the least efficient man in the working force. . . . . The product of all labor above this line—and that is the sum total of wages—may be treated as rent of superior personal quality."[1] We may carry this analogy further. Men, like soils, are of very different qualities, and are thus adapted to very different uses. One may be a successful entrepreneur, another a machinist, another a teamster, while a fourth may be able to earn a bare living by shoveling dirt. Now it is certain that the entrepreneur might be able to drive a team or handle a shovel, just as in the other case land used for building lots and gardens might be used for pasture. Hence the doctrine of price-determining rent must hold that the wages paid for the lower grades of employment enter into the price of the product of the higher grades, just as rents of land for the lower uses of production enter into the price of the products of the higher uses. Jevons recognizes this when he says: "But when labor is turned from one employment to another, the wages it would otherwise have yielded must be debited to the expenses of the new product."[2]

But I must dissent from this conclusion also. Let us take the case of a factory, in which are employed workmen of the various degrees of capacity suited to such an enterprise. One of these employees has sufficient ability to manage the business; others can make models and draw plans and designs for the various products; others can operate the machinery of varying degrees of intricacy; while others, unable to do any of the preceding, can still shovel coal, load and unload cars, and do other odd jobs, the least efficient of all being a man who can do only

[1] J. B. CLARK, "Distribution as Determined by Rent," *Quarterly Journal of Economics*, April 1891, p. 314. For similar statements see also J. A. HOBSON, "The Law of the Three Rents, *ibid.*, p. 263.

[2] *Theory of Political Economy*, 2d ed., Preface, p. lv.

enough of such work to earn what it costs to keep him. In this ideal factory we now have illustrated the conditions of an area of land devoted to several productive uses. The workmen correspond to the landlord; their several capacities to the various degrees of fertility of the soil; the capacity of the least efficient man to the margin of cultivation where the product is worth only enough to pay its cost of production. All wages paid to the other workmen above that paid to this man is a rent of personal capacity which goes into the pockets of these workmen just as all that is produced by lands above that on the margin of cultivation is a rent of land, and goes into the pockets of the landlords. And now suppose these workmen remit this rent of personal capacity, who will be benefited? On the theory of a price-determining rent, it will be the consumers of the product. But here again there can be no fall in prices if the demand does not decline, and the supply does not increase; and the supply cannot increase unless more workmen are added to the several departments. Will the manager of the business now undertake to do the work of a draughtsman or machinist? Will the machinist undertake to make patterns or to shovel coal? And will the unskilled coal heaver undertake to operate machinery or manage the business? Certainly not; for were the workmen themselves to desire a tranfer from the department in which they are most efficient, the self-interest of their employer would not permit such a change to be effected. The output of the factory being the same, prices cannot fall, and the employer himself will be the only person benefited by this remission of surplus wages on the part of his employees.

In applying the law of rent to capital, Mr. Hobson boldly asserts that here, as in the case of labor, the rent is price-determining.[1] But here again may be applied the same reasoning which we have employed in the case of the rent of labor, and here again the same conclusion will be forced upon us.

Thus I am persuaded that the general acceptance of the con-

[1] "The Law of the Three Rents," *Quarterly Journal of Economics*, April 1891, p. 272.

cept of price-determining rent has been due not only to a failure to recognize that a no-rent margin of cultivation always exists in intensive, if not in extensive, cultivation, but also to a failure to apply the same fundamental principles of rent to land devoted to several productive uses that we do to land devoted to a single use. For the reasons given, the classification of rents as "differential" and "marginal," or "price-determined" and "price-determining," seems a superficial one. It is a classification which has long pervaded economic thought, but I do not believe that the inconsistencies of the distinction have been squarely faced. If the analysis of the problem which I have ventured is a correct one, we have in this differentiation of rents departed from the broad highway of the Ricardian economics only to find ourselves entangled in a maze of intricacies and obscurities from which we must sooner or later retrace our steps.

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